

oven, microwave oven, refrigerator, freezer, washer, dryer, dishwasher, water heater, or trash compactor manufactured for household, commercial, or recreational use.

Large appliance surface coating line means that portion of a large appliance assembly plant engaged in the application and curing of organic surface coatings on large appliance parts or products.

Organic coating means any coating used in a surface coating operation, including dilution solvents, from which VOC emissions occur during the application or the curing process. For the purpose of this regulation, powder coatings are not included in this definition.

Powder coating means any surface coating that is applied as a dry powder and is fused into a continuous coating film through the use of heat.

Spray booth means the structure housing automatic or manual spray application equipment where a coating is applied to large appliance parts or products.

Surface coating operation means the system on a large appliance surface coating line used to apply and dry or cure an organic coating on the surface of large appliance parts or products. The surface coating operation may be a prime coat or a topcoat operation and includes the coating application station(s), flashoff area, and curing oven.

Transfer efficiency means the ratio of the amount of coating solids deposited onto the surface of a large appliance part or product to the total amount of coating solids used.

VOC content means the proportion of a coating that is volatile organic compounds (VOC's), expressed as kilograms of VOC's per liter of coating solids.

VOC emissions means the mass of volatile organic compounds (VOC's), expressed as kilograms of VOC's per liter of applied coating solids, emitted from a surface coating operation.

(b) All symbols used in this subpart not defined below are given the meaning in the Act or subpart A of this part.

C_a = the concentration of VOC's in a gas stream leaving a control device and entering the atmosphere (parts per million by volume, as carbon).

C_b = the concentration of VOC's in a gas stream entering a control device (parts per million by volume, as carbon).

C_t = the concentration of VOC's in a gas stream emitted directly to the atmosphere (parts per million by volume, as carbon).

D_c = density of coating (or input stream), as received (kilograms per liter).

D_d = density of a VOC-solvent added to coatings (kilograms per liter).

D_r = density of a VOC-solvent recovered by an emission control device (kilograms per liter).

E = the VOC destruction efficiency of a control device (fraction).

F = the proportion of total VOC's emitted by an affected facility that enters a control device (fraction).

G = the volume-weighted average mass of VOC's in coatings consumed in a calendar month per unit volume of applied coating solids (kilograms per liter).

L_c = the volume of coating consumed, as received (liters).

L_d = the volume of VOC-solvent added to coatings (liters).

L_r = the volume of VOC-solvent recovered by an emission control device (liters).

L_s = the volume of coating solids consumed (liters).

M_d = the mass of VOC-solvent added to coatings (kilograms).

M_o = the mass of VOC's in coatings consumed, as received (kilograms).

M_r = the mass of VOC's recovered by an emission control device (kilograms).

N = the volume-weighted average mass of VOC's emitted to the atmosphere per unit volume of applied coating solids (kilograms per liter).

Q_a = the volumetric flow rate of a gas stream leaving a control device and entering the atmosphere (dry standard cubic meters per hour).

Q_b = the volumetric flow rate of a gas stream entering a control device (dry standard cubic meters per hour).

Q_t = the volumetric flow rate of a gas stream emitted directly to the atmosphere (dry standard cubic meters per hour).

R = the overall VOC emission reduction achieved for an affected facility (fraction).

T = the transfer efficiency (fraction).

V_c = the proportion of solids in a coating (or input stream), as received (fraction by volume).

W_c = the proportion of VOC's in a coating (or input stream), as received (fraction by weight).

§ 60.452 Standard for volatile organic compounds.

On or after the date on which the performance test required by § 60.8 is completed, no owner or operator of an

affected facility subject to the provisions of this subpart shall discharge or cause the discharge of VOC emissions that exceed 0.90 kilogram of VOC's per liter of applied coating solids from any surface coating operation on a large appliance surface coating line.

§ 60.453 Performance test and compliance provisions.

(a) Sections 60.8 (d) and (f) do not apply to the performance test procedures required by this subpart.

(b) The owner or operator of an affected facility shall conduct an initial performance test as required under § 60.8(a) and thereafter a performance test each calendar month for each affected facility according to the procedures in this paragraph.

(1) An owner or operator shall use the following procedures for any affected facility that does not use a capture system and control device to comply with the emissions limit specified under § 60.452. The owner or operator shall determine the composition of the coatings by formulation data supplied by the coating manufacturer or by analysis of each coating, as received,

using Method 24. The Administrator may require the owner or operator who uses formulation data supplied by the coating manufacturer to determine the VOC content of coatings using Method 24. The owner or operator shall determine the volume of coating and the mass of VOC-solvent used for thinning purposes from company records on a monthly basis. If a common coating distribution system serves more than one affected facility or serves both affected and existing facilities, the owner or operator shall estimate the volume of coatings used at each facility, by using the average dry weight of coating and the surface area coated by each affected and existing facility or by other procedures acceptable to the Administrator.

(i) Except as provided in paragraph (b)(1)(iv) of this section, the weighted average of the total mass of VOC's consumed per unit volume of coating solids applied each calendar month will be determined as follows.

(A) Calculate the mass of VOC's consumed ($M_o + M_d$) during the calendar month for each affected facility by the following equation:

$$M_o + M_d = \sum_{i=1}^n L_{ci} D_{ci} W_{oi} + \sum_{j=1}^m L_{dj} D_{dj} \quad (1)$$

($\sum L_{dj} D_{dj}$ will be 0 if no VOC-solvent is added to the coatings, as received) where:

n is the number of different coatings used during the calendar month, and
m is the number of different VOC-solvents added to coatings during the calendar month.

(B) Calculate the total volume of coating solids used (L_s) in the calendar month for each affected facility by the following equation:

$$L_s = \sum_{i=1}^n L_{ci} V_{si} \quad (2)$$

where n is the number of different coatings used during the calendar month.

(C) Select the appropriate transfer efficiency from table 1. If the owner or

operator can demonstrate to the satisfaction of the Administrator that transfer efficiencies other than those shown are appropriate, the Administrator will approve their use on a case-by-case basis. Transfer efficiencies for application methods not listed shall be determined by the Administrator on a case-by-case basis. An owner or operator must submit sufficient data for the Administrator to judge the accuracy of the transfer efficiency claims.

TABLE 1—TRANSFER EFFICIENCIES

Application method	Transfer efficiency (T_k)
Air-atomized spray	0.40
Airless spray	0.45
Manual electrostatic spray	0.60
Flow coat	0.85